

Alternative A

Extensive Demand Management

Overview

This alternative will implement an extensive program of demand management actions in all water service areas dependent on the Bay-Delta watershed. These actions will produce substantial water savings, increasing water supply flexibility. This alternative will reduce fish entrainment losses by decreasing diversions from the Bay-Delta watershed and avoiding diversions during environmentally sensitive periods when fish are more vulnerable. Total diversions from the system will be reduced, allowing reservoir operation to increase spring Delta outflow as a benefit to fish transport and enhancement of ecosystem productivity. This alternative targets those levees with the highest priority to reduce system vulnerability in the Delta and improve water quality.

Extensive demand management increases flexibility and reduces entrainment

Currently, limitations on fish entrainment (take limits) are set to avoid jeopardizing fish populations. When these limits are approached, diversions are curtailed or stopped, creating a high degree of uncertainty for water users. As habitat is improved, leading to greater fish populations, the relative effect of diversions on population will be reduced. This will consequently lessen take limit constraints on diversions, providing improved water supply reliability. A program of highest-priority habitat restoration actions will be implemented to benefit fish and wildlife species and reduce constraints on water management operations caused by protection of aquatic species. Mosaics of shallow water, riverine, and riparian habitat will be restored along the Sacramento River, in the Delta, and along reconstructed Delta levees. Diked wetlands near Suisun Bay will be restored to tidal action for wet year spawning and rearing of Delta smelt and rearing of salmon.

Highest priority habitats are restored

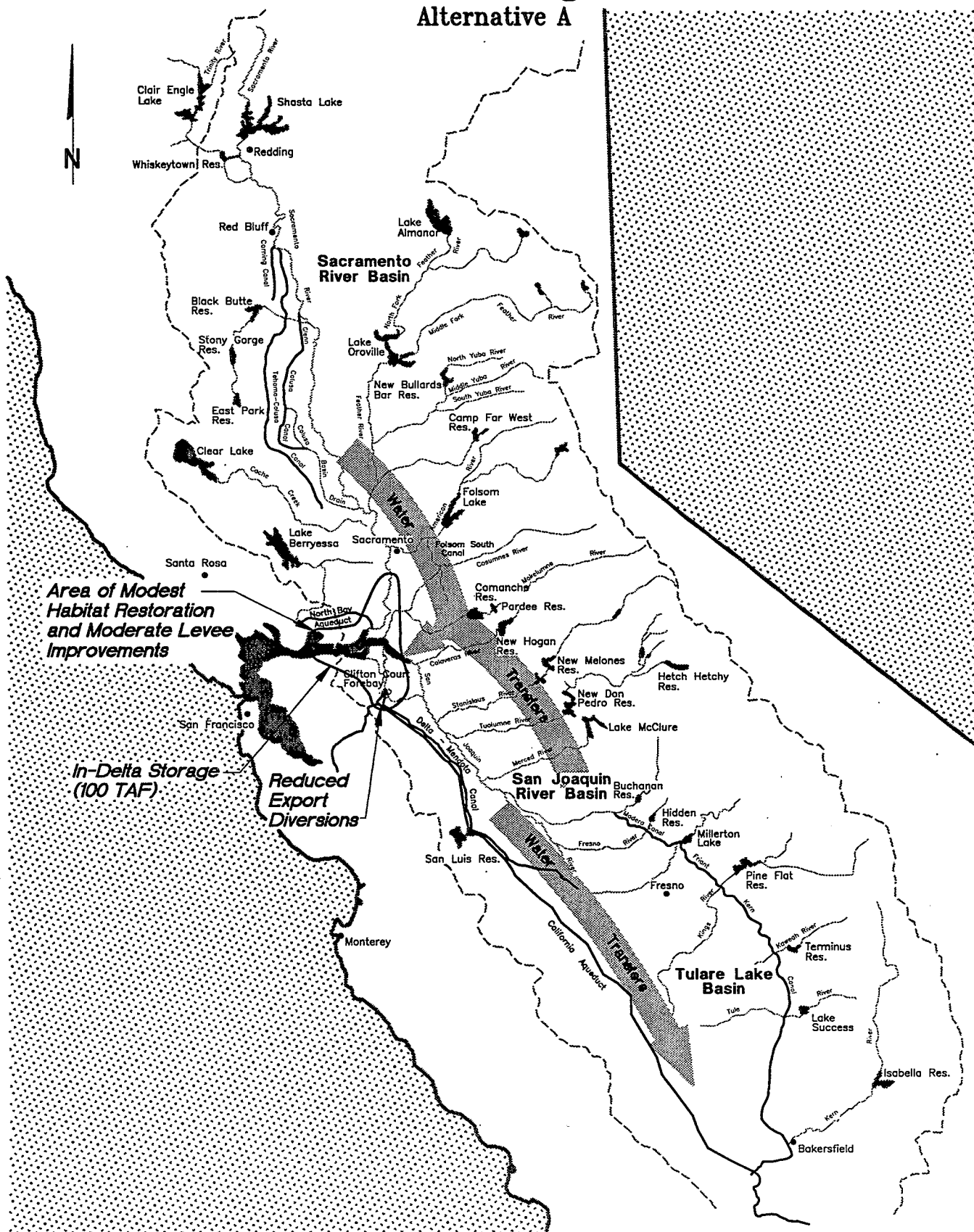
To further enhance the survival of protected aquatic species, Delta export diversions will be reduced during the spring (February-June) period to produce greater Delta outflows for fish transport and to reduce fish entrainment at the export pumps. Fish screens will be installed on high priority diversions throughout the Bay-Delta system, fish guidance facilities will be operated at the head of Old River and Georgiana Slough, and export forebay configuration and operations will be modified to reduce fish losses at the export pumps. Ecosystem restoration actions will be guided by a strategy of adaptive management.

Several actions reduce fish entrainment

Extensive demand management including water conservation, water reclamation, and land retirement will be implemented to sustain supplies for existing water users and provide alternative supplies for other users. Intensive use of expanded urban "Best Management Practices" and agricultural "Efficient Water Management Practices" will conserve 500 TAF-1 MAF of water per year. Substantial water reclamation investments will produce approximately 1 MAF of new urban water supplies.

Extensive demand management balances supply and demand

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Water pricing structures (e.g., inclining block rates) that provide incentives to conserve water will be established. About 750,000 to 850,000 acres of land will be permanently retired, reducing evapotranspiration by over 1.5 MAF per year in normal water years and conserving that water for Delta outflow and other beneficial uses. This alternative will also establish a long-term drought water bank to improve supply reliability in dry years and encourage temporary land fallowing to acquire 1 to 2 MAF for dry year transfers. Market mechanisms and incentives will facilitate water transfers.

Water management tools include pricing, land retirement, and water banking

To help allow shifts in water diversion and storage away from the spring (February-June) period, this alternative will expand conjunctive use and groundwater banking in service areas dependent on the Bay-Delta watershed. To protect Delta outflow in dry years, expanded in-lieu groundwater banking in the southern San Joaquin Valley and other areas dependent on Delta supplies will help reduce demands for surface water in those years.

Conjunctive use shifts time of diversions

Also under this alternative, approximately 100 TAF of water storage will be constructed on a south Delta island to be operated for environmental purposes. Water will be diverted onto the island through state-of-the-art fish screens at times when fish are less vulnerable. This water will be released to aid transport of fish through the Delta and to provide some water for export diversions when fish are vulnerable. In addition, about 100 TAF of water will be obtained or developed in the San Joaquin River basin for release to improve transport of fish through the Delta or to improve water quality.

Delta water storage helps reduce entrainment

Delta water quality will be enhanced by implementing modest source-control actions for pollutants in the Bay-Delta watershed. Land retirement will focus on marginally productive lands, especially those that contribute substantially to regional drainage and water quality problems. This will improve water quality in the San Joaquin River and the south and central Delta. In addition, there will be a slight reduction in recycled salt load to the San Joaquin Valley.

Modest actions for pollutant source control

The vulnerability of the Bay-Delta system will be reduced through implementation of a comprehensive Delta Protection Plan. The plan will guide the stabilization or improvement of certain Delta levees to increase protection, the maintenance of levees, and implementation of an emergency response program to address levee failure. Under this alternative, stabilization of levees would receive moderate emphasis, while maintenance and emergency response would receive modest emphasis.

Comprehensive Delta Protection Plan

Potential Sequencing

Stage 1. Implementation would begin with the core actions.

Core actions

Stage 2. Actions implemented during Stage 2 of this alternative will include establishment of a permanent drought water bank, implementation of a moderate demand management program, high priority habitat restoration actions, and

Demand management and habitat restoration

installation of high priority fish screens. Implementation of a comprehensive Delta protection plan will begin. Additional San Joaquin River water (100 TAF) will be developed or acquired for environmental uses. Approximately 70,000 to 100,000 acres of marginally productive agricultural lands in the San Joaquin Valley will be retired. Expanded real-time monitoring will be implemented to allow the Delta export pumps to be operated at full capacity during safe periods and provide operational flexibility to avoid fish entrainment during vulnerable periods. Groundwater banking programs in the San Joaquin Valley and other service areas will be expanded.

Stage 3. The third stage will include expanded implementation of water conservation, reclamation, and conjunctive use actions; construction of in-Delta water storage; installation of fish guidance facilities; and retirement of 200,000 to 300,000 additional acres of agricultural land. Stabilization of levees would receive moderate emphasis, while maintenance and emergency response would receive modest emphasis.

***In-Delta storage
and expanded
demand
management***

Stage 4. The fourth stage will include additional increments of expanded demand management including water conservation, reclamation, and conjunctive use actions; and retirement of 200,000 to 300,000 additional acres of agricultural land. Modification of the Clifton Court Forebay intake and construction of a secondary intake will be completed to reduce fish entrainment losses at the export pumps.

***Expanded
demand
management***

Stage 5. In the final stage, this alternative will include achievement of the most extensive actions to expand water conservation, water reclamation, and conjunctive use. Additional agricultural land will be permanently retired to bring the total to 750,000 to 850,000 acres.

***Demand
management,
land retirement,
entrainment
reduction***

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Potential Sequencing

